

# Telescience Portal for Biomedical Imaging

*Sponsored By: NIH-National Center for Research Resources and NSF*

*Performed By: UCSD/National Center for  
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## Description:

The Telescience portal is a collection of easy to use Web tools that assist users in performing the advanced computational tasks associated with conducting end-to-end electron tomography via a point and click interface. This abstracts the complexity of advanced computational technologies, while still giving the users control of their data and the reconstruction process.

Featuring a new interactive, collaborative Web "environment" to access key elements of the cyber infrastructure, components of the Telescience portal include:

- Remotely controllable high voltage electron microscope with relevant biomedical or biological samples
- A nationally distributed computational grid running software to compute 3D volumes from projections delivered by the remote microscope – NSF, NIH, and NASA computational resources are used
- A distributed data grid/database where information being acquired can be deposited and also compared with previously deposited data sets
- A handheld wireless interface for viewing images, checking job status, and accessing data files

## Accomplishments:

- Users can be authenticated from any access point, using the highest levels of encryption with a single login and password
- Integrated database access – the portal's workflow supports a feedback system in which every user participates in increasing the knowledge and expertise to be drawn upon by future users
- A Web interface to distributed computing resources
- Proof of concept of the technologies that will be further matured in the Biomedical Informatics Research Network (BIRN)

**gridport.npaci.edu/Telescience**

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